DROUGHT UPDATE: WEEK OF JUNE 20

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Weekly Drought Update

Salt Lake City (June 23, 2021) – As the worst drought in decades continues to impact Utah, the Utah Divisions of Water Resources and Water Rights are closely monitoring and responding to conditions. The following measurements and information provide context to Utah's current drought conditions, water storage, stream flows and the allocation of water rights.

Precipitation and soil moisture

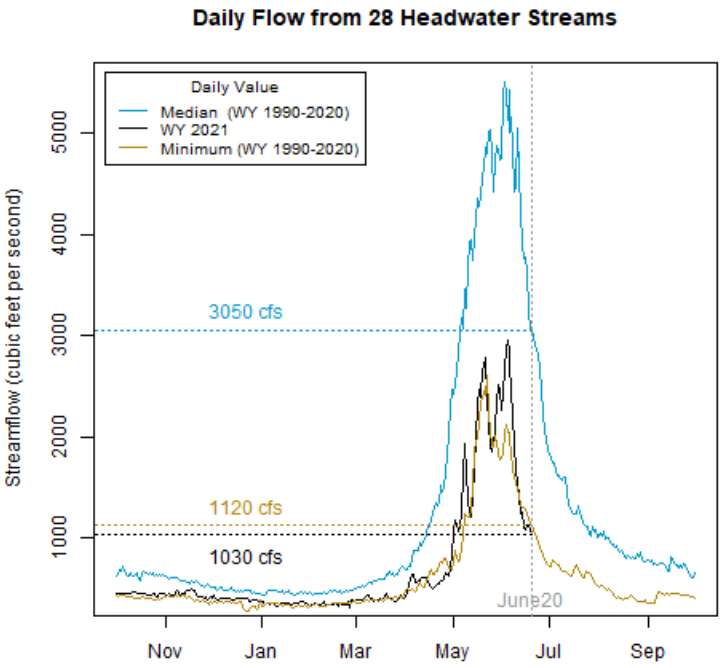
Utah's drought conditions are serious. The intensity and the fact that we haven't had any recent relief have created this extreme situation. The state's dry conditions during April and May and record high temperatures in June continue to elevate drought conditions.

- Air temperatures for the week were 9.4 degrees Fahrenheit above average.
- On average, the state was drier than normal during the last week by approximately 0.16 inches (7-day departure from average).
- Soils are 12% drier than average, with soil moisture for June 21 at 42.2% saturation, compared to an average of 54.7% saturation.

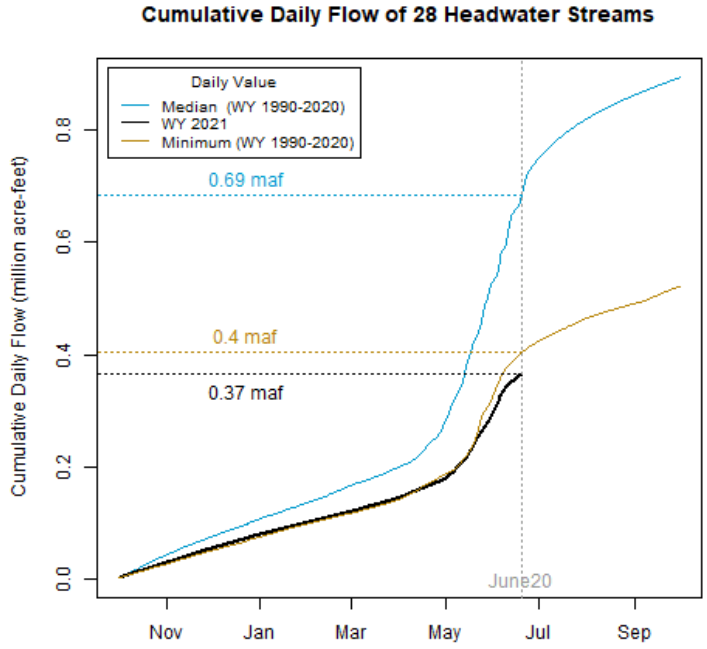
Streamflows

Following Utah's dismal snowpack, record dry soils absorbed the little runoff we received. As a result, streams statewide are flowing at less than 50% of normal, which means less water is getting to reservoirs. Below is a snapshot of current streamflow conditions:

- Sixty-four of Utah's 96 stream gauges reporting data are flowing well below normal.
- Fourteen streams are flowing at their lowest levels ever recorded.



a.) The flows for 28 headwater streams were added together to show how Utah's water supply is being affected. This chart shows the Water Year (WY) from October to September for the median year (1990-2020) (blue line), the minimum year (mustard line) during that time period and this year (black line). We are below the previous minimum cumulative flow record.



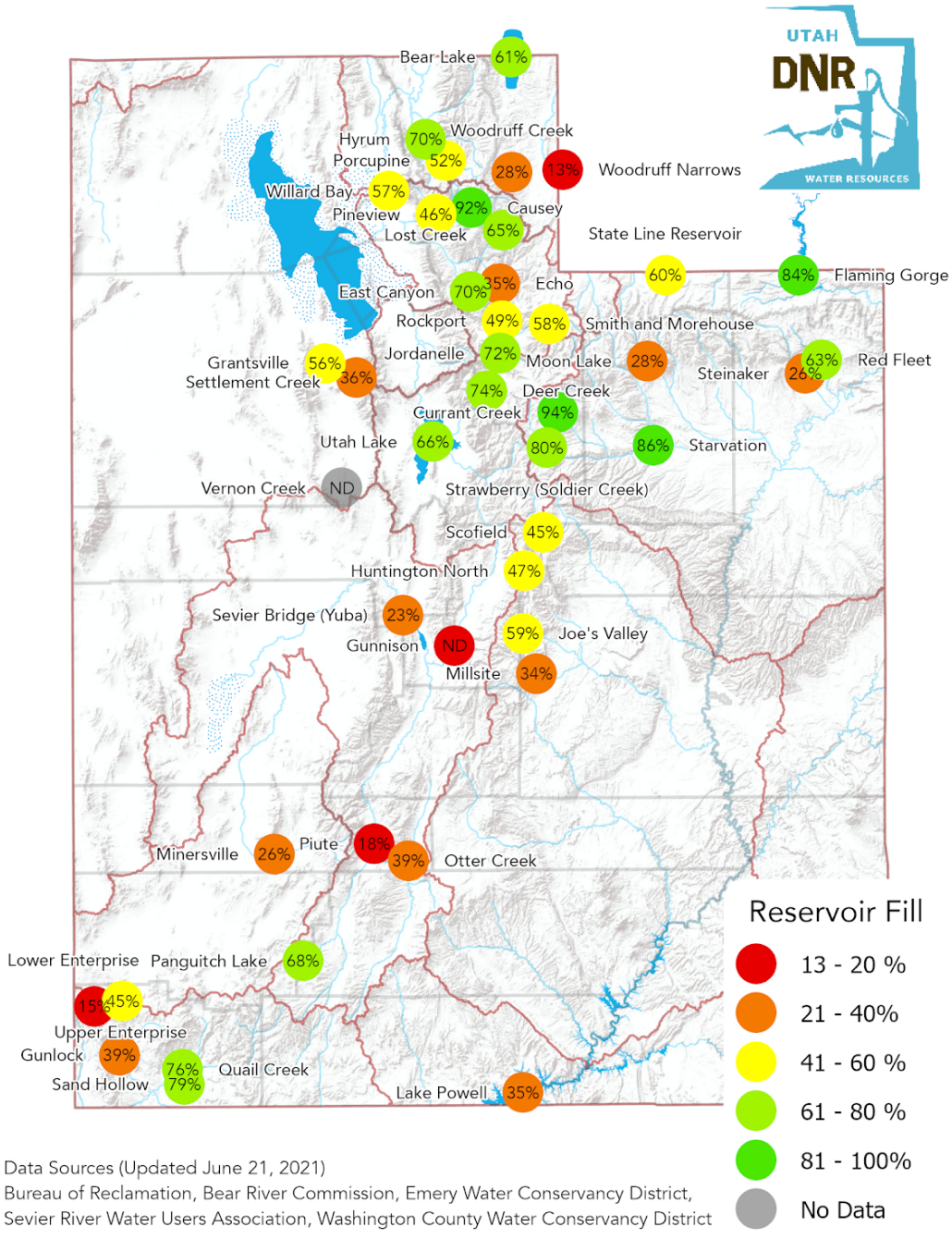
b.) *The flows for 28 headwater streams were added together to show how the daily stream flows range giving state perspective. This chart shows the Water Year (WY) from October to September for the median year (1990-2020) (blue line), the minimum year (mustard line) during that time period and this year (black line).* ***Utah streams are below the previous minimum daily flow record****.*

Reservoir and Lake Levels

About 95% of Utah's water comes from snowpack. This state-wide average ranges from around 75% in the southwest corner to over 95% in the northern part near the Weber Basin headwaters. Different-sized reservoirs are located throughout the state to catch and store runoff. Small reservoirs store about one year's worth of water, while larger reservoirs, like Strawberry or Jordanelle, store several year's worth. Reservoir storage helps to prevent water shortages and is dependent on snowpack and runoff.

- Major reservoirs statewide are currently 63% of available capacity.
- 21 of 42 of our largest reservoirs are below 55% of available capacity.

- On average, current reservoir levels are below September 2020 levels, toward the end of the irrigation season. This is significant considering the majority of Utah's watering season is ahead of us.
- Several Bureau of Reclamation reservoirs are below any previous storage and elevation level in the last 30 years, including Lake Powell, Rockport and Steinaker.
- The Great Salt Lake's current elevation is 4,191.9 feet, about five inches from its historic recorded low level (4191.4 feet) documented in 1963.



Data Sources (Updated June 21, 2021)
Bureau of Reclamation, Bear River Commission, Emery Water Conservancy District, Sevier River Water Users Association, Washington County Water Conservancy District

Drought Effects on Priority Distribution of Water Rights in Utah

Water rights are distributed by the state engineer with priority going to the earliest rights. For example, a water right established in 1889 is entitled to receive its full flow before water rights established in 1890 or later can receive any water. This principle is called the "Prior Appropriation Doctrine" or "first in time, first in right." The earliest water rights in Utah are called "direct flow" rights, meaning they cannot be stored. Storage reservoirs were built later on so storage rights generally have priority dates later than direct flow rights, although some "high" water rights (direct flow rights with late priority dates) exist.

While some water rights are owned by public water suppliers, others are held by individuals like farmers and ranchers. Priority distribution happens every year, not just during droughts, and occurs irrespective of the type of use. Most water rights are fully or partially curtailed by mid-summer when the natural flow of a stream drops following spring runoff. The term "natural flow" refers to the total supply of a stream, which is generally different from the flow of the stream at any particular point.

Natural flow on complex systems is determined using accounting models developed by the Division of Water Rights. When the natural flow is greater than 100% of the direct flow rights, water can be stored on the system. When the natural flow drops below 100% of the direct flow rights, these rights are reduced according to priority date. Storage, if available, can be released to make up all or part of the deficit. The amount of storage available on each system is a function of the specific projects developed on the system over the last hundred-plus years. This year has seen an early decrease in natural flow because of very little spring runoff. In previous years systems were generally storing water in mid-June, sometimes in considerable amounts, while 2021 is already seeing some of the earliest water rights being curtailed.

While statewide there are many different river systems, the information below highlights water rights priorities, natural flow and direct flow on just four of them. CFS below stands for cubic feet per second.

Middle Bear River – Priorities: Direct Flow (1860 - 1909), Storage (1911), High Rights (1914 - 1989)

Date	*Priority from River*	*Natural Flow*	*% Direct Flow Rights*
June 15, 2019	1989	5,093 cfs	366%
June 15, 2020	1917	2,404 cfs	173%
June 15, 2021	1889	333 cfs	24%

- The water supply on the Logan River, tributary to the Middle Bear, is the third-lowest on record out of 58 years (1977 and 1992 were lower) according to the Colorado Basin River Forecast Center (CBRFC) Water Supply Forecast (Station LGNU1).
- Currently, only 24% of the direct flow water rights are being met with earliest priority rights being fulfilled from 1860 to 1889.

Upper Provo River – Priorities: Direct Flow (1st Class - 17th Class), Storage

Date	*Priority from River*	*Natural Flow*	*% Direct Flow Rights*
June 18, 2019	Storage	1,615 cfs	356%
June 18, 2020	17th Class	384 cfs	85%
June 18, 2021	80% 1st Class	121 cfs	27%

- The water supply on the Provo River at Hailstone is the third-lowest on record out of 67 years (1977 and 1961 were lower) according to the CBRFC Water Supply Forecast (Station PVHU1).
- Currently, only 27% of the direct flow water rights are being met, consisting of only 80% of 1st Class rights.

Upper Duchesne River – Priorities: Direct Flow (1900 - 1964), Storage (1964)

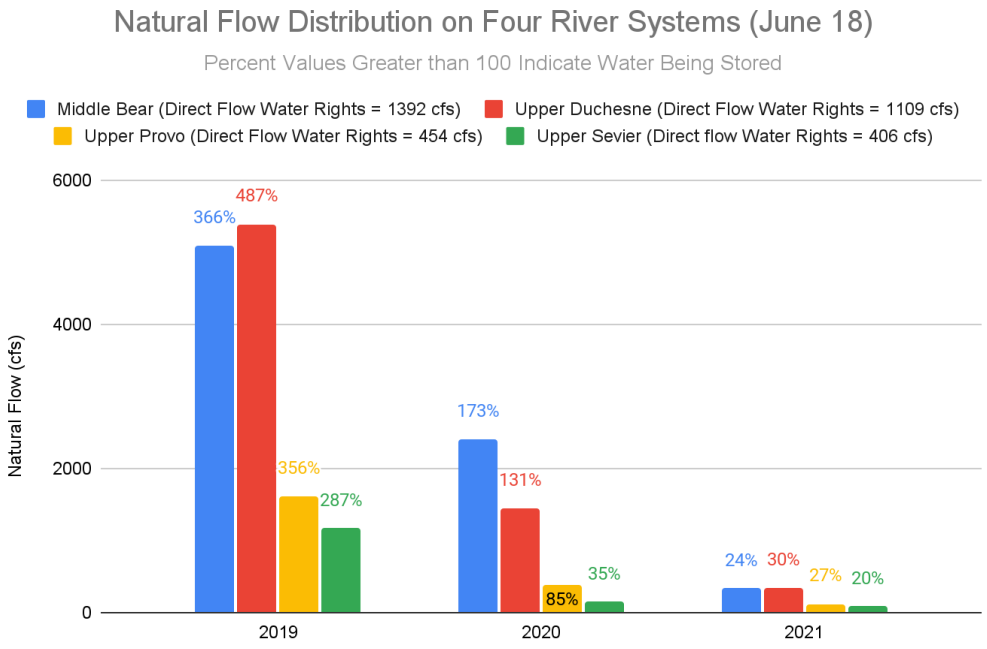
Date	*Priority from River*	*Natural Flow*	*% Direct Flow Rights*
June 17, 2019	Storage	5,397 cfs	487%
June 17, 2020	Storage	1,449 cfs	131%
June 17, 2021	1918	338 cfs	30%

- The water supply on the Duchesne River at Randlett is the second-lowest on record out of 79 years (1977 was lower) according to the CBRFC Water Supply Forecast (Station DURU1).
- Currently, only 30% of the direct flow water rights are being met with the earliest priority rights being fulfilled from 1900 to 1918.

Upper Sevier River – Priorities: Direct Flow (1st Class – 3rd Class), Storage

Date	*Priority from River*	*Natural Flow*	*% Direct Flow Rights*
June 17, 2019	Storage	1,165 cfs	287%
June 17, 2020	61% 1st Class	144 cfs	35%
June 17, 2021	34% 1st Class	82 cfs	20%

- The water supply on the Sevier River at Piute is the third-lowest on record out of 103 years (1957 and 1934 were lower) according to the CBRFC Water Supply Forecast (Station PIUU1).
- Currently, only 20% of the direct flow water rights are being met, consisting of only 34% of 1st Class rights.



Well Replacements

In addition to surface water rights, the state engineer oversees the appropriation of groundwater and construction of groundwater wells. A water right may be approved to allow for the diversion of surface water, groundwater, or a combination of both surface and groundwater. Both surface and groundwater rights are also distributed under the priority system. As groundwater conditions change, well owners may need to replace their well. This may be due to issues of the existing well, or the need to drill deeper. When this happens a water user files either a replacement, or renovate application. In some cases, a change application may need to be filed. This is dependent on the individual status of the user's water right.

- So far this year there have been 72 total replacement and deepening requests made statewide. If this trend holds, Utah will exceed it's annual average well replacements in 2021.
- As a comparison, there were 113 in 2020 and 102 in 2019. The average annual count during the past five years is 107.